

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۱۹۰ کلاس دوازدهم ^۵بسم الله

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لیکلی ضابطہ

$$\lim_{x \rightarrow -1} \frac{\sqrt{2x+3} - \sqrt{3x+4}}{1 + \sqrt{x}} \xrightarrow{HOP} \lim_{x \rightarrow -1} \frac{\frac{2}{2\sqrt{2x+3}} - \frac{3}{2\sqrt{3x+4}}}{\frac{1}{2\sqrt{x}}} = \frac{1 - \frac{3}{2}}{\frac{1}{2}} = \boxed{\frac{-1}{2}}$$

$$\lim_{x \rightarrow 1} \frac{2x - \sqrt{2x+1}}{2x - \sqrt{3x+1}} \xrightarrow{0/0} \lim_{x \rightarrow 1} \frac{(\sqrt{2x+1} - 1)(2\sqrt{x} - 1)}{2x - \sqrt{3x+1}} \times \frac{2x + \sqrt{3x+1}}{2x + \sqrt{3x+1}}$$

$$= \lim_{x \rightarrow 1} \frac{(\sqrt{2x+1} - 1)(2\sqrt{x} - 1)(2)}{(x-1)(2x+1)} = \lim_{x \rightarrow 1} \frac{2(2\sqrt{x} - 1)}{(\sqrt{x}+1)(2x+1)} = \boxed{-1/2}$$

$$\lim_{x \rightarrow 0} \frac{a + \sqrt{bx+c}}{x} = \frac{1}{f} \xrightarrow{1/0} a + \sqrt{b(0)+c} = 0 \Rightarrow \sqrt{c} = -a \quad (1)$$

$$\lim_{x \rightarrow 0} \left(\frac{\sqrt{bx+c} - \sqrt{c}}{x} \times \frac{\sqrt{bx+c} + \sqrt{c}}{\sqrt{bx+c} + \sqrt{c}} \right) = \lim_{x \rightarrow 0} \frac{bx+c-c}{x(\sqrt{bx+c} + \sqrt{c})} = \frac{1}{f} \Rightarrow \frac{b}{2\sqrt{c}} = \frac{1}{f} \Rightarrow \sqrt{c} = \frac{b}{2f} \quad (2)$$

$$1, 2 \Rightarrow \sqrt{c} = -a \Rightarrow \frac{ab}{c} = \frac{(-2b)b}{f^2 b^2} = \boxed{\frac{-1}{f}}$$

$$\lim_{x \rightarrow -\infty} \frac{x + k[\frac{x}{k}]}{\sin x} = +\infty$$

$$\lim_{x \rightarrow -\infty} \frac{x + k[\frac{(-x)}{k}]}{\sin(-x)} = \frac{x + k(-x/k)}{0^+} = \frac{x - x}{0^+} = \frac{0}{0^+} = +\infty \Rightarrow -x + k > 0 \Rightarrow k < x$$

$$\lim_{x \rightarrow -\infty} \frac{x + k[\frac{(-x)}{k}]}{\sin(-x)} = \frac{x + k(-x/k)}{0^-} = \frac{x - x}{0^-} = \frac{0}{0^-} = -\infty \Rightarrow x - k < 0 \Rightarrow k > x$$

$k < x < k$
 $\Rightarrow$
 $[-k] = [-x]$

$$\lim_{x \rightarrow \lambda} \frac{b\sqrt{x+\sqrt{x}} - \sqrt{b}}{ax - b} \xrightarrow{0/0} \lim_{x \rightarrow \lambda} \frac{\Lambda a(\sqrt{x+\sqrt{x}} - \sqrt{b})}{(x-\lambda)(\sqrt{x+\sqrt{x}} + \sqrt{b})}$$

$$= \lim_{x \rightarrow \lambda} \frac{\Lambda a(\sqrt{x+\sqrt{x}} - \sqrt{b})}{\alpha(x-\lambda)f} \times \frac{\sqrt{x+\sqrt{x}} + \sqrt{b}}{\sqrt{x+\sqrt{x}} + \sqrt{b}} = \lim_{x \rightarrow \lambda} \frac{\Lambda(x-\lambda)}{(x-\lambda)(\sqrt{x+\sqrt{x}} + \sqrt{b})} = \boxed{\frac{1}{f}}$$